

Fracture of the Forearm Bones

PBL (TRAUMA)



Muhammad Redzwan

081303583

Introduction

- **Common sites** of fracture for all age groups
- Frequently, **closed fractures**.
- Fractures include:
 - Both of forearm bones (radio-ulnar)
 - Monteggia
 - Galeazzi
 - Colles'

Fractures of the Forearm Bones

- Commonly **radio-ulnar** fracture, but sometimes only involving either.
- **Severe displacements** can occur in adults, but rarely in children
- Displacements include:
 - Angulation: medially or anteriorly
 - Shift in any direction
 - Rotation

Diagnosis & Clinical Features

- Fractures in adults are obvious due to displacement.
- Fractures in children are often not displaced; may not have much signs.
- X-ray aids to conform diagnosis and helps in management.



(a)



(b)



(c)



(d)



(e)

25.1 Fractured radius and ulna in children

Greenstick fractures (a) need only correction of angulation (b), and plaster splintage. Complete fractures (c) are harder to reduce; but provided alignment is corrected and held in plaster (d), slight lateral shift remodels with growth (e).

Management

- Assess Airway, Breathing and Circulation and manage as necessary.
- Assess upper limb neurovascular function.
- Examine the wrist, elbow and forearm for tenderness and range of motion.
- Perform a complete examination for other injuries.
- Immobilise the forearm and upper arm whilst waiting for X-ray.
- Provide analgesia.

Treatment

Children:

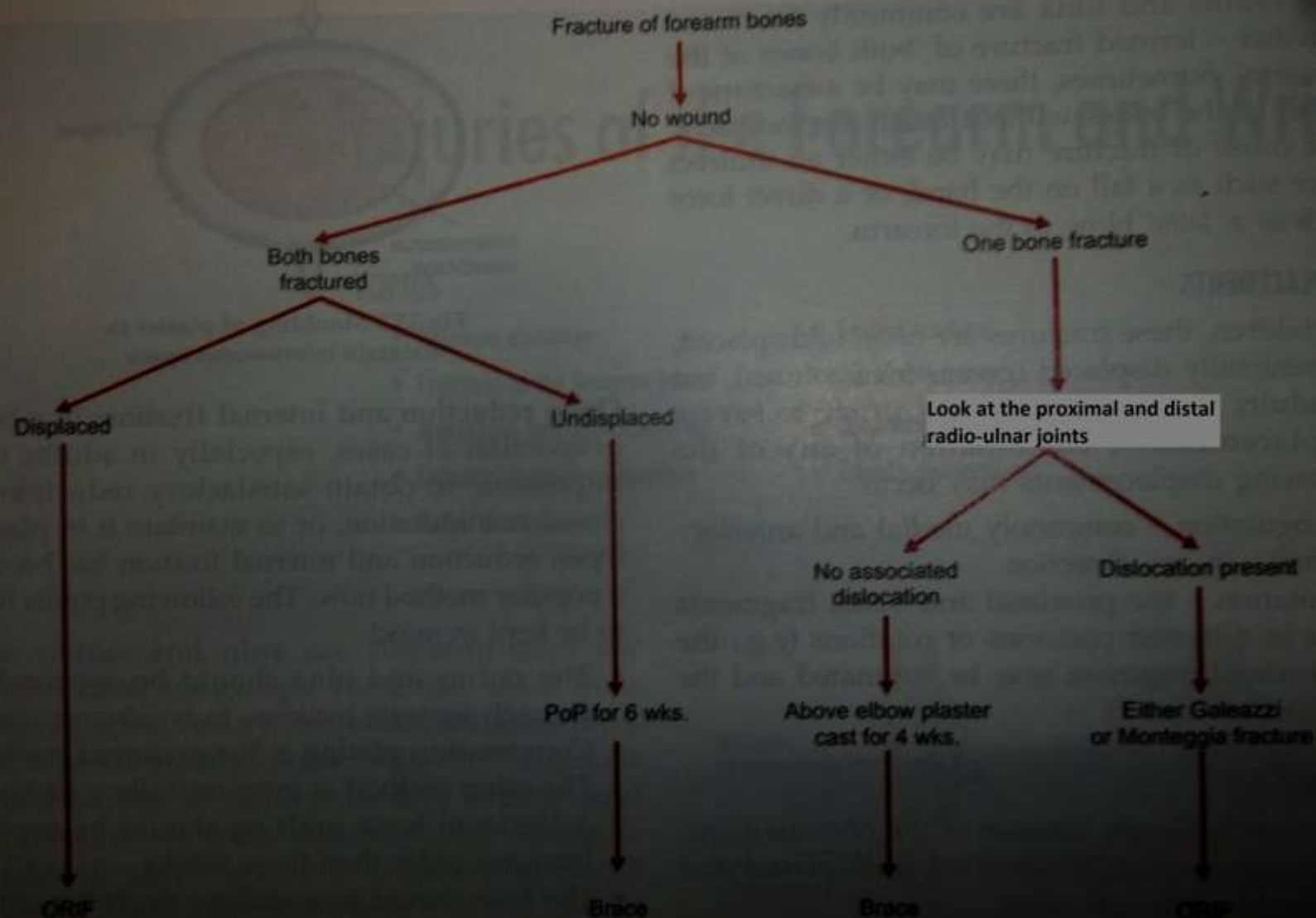
- Conservative: **Closed reduction by manipulation** under GA, and immobilization in above elbow **cast**.
- If the fracture is proximal to pronator teres, the forearm is supinated; if distal the forearm is held in neutral.
- Assess after a week and 8th week. Advise hand and shoulder exercise; avoid contact sport.

Treatment

Adult:

- Close reduction is difficult, and may re-displaced even in the cast.
- **Open Reduction and Internal Fixation (ORIF)**
 - Compression plate is preferred
 - Bone grafting in fracture > 3 weeks
 - Advise to move the limb; to prevent rigidity

Flow chart-15.1 Plan of treatment of forearm bone fractures



ORIF- Open reduction and internal fixation.

Brace- A plastic moulded support for the forearm with a possibility to mobilise joints, generally used after 4-6 weeks of immobilisation.

Complications

- **Infection:** Osteomyelitis
- **Volkmann's ischemia:** Ischemic damage to the flexor muscles of the forearm.
- **Delayed union and non-union**
- **Malunion**
- **Cross union**

References

- Apley's System of Orthopedics and Fractures
- Essential Orthopaedics by J. Maheshwari
- Forearm Injuries and Fractures, Patient.co.uk
<<http://www.patient.co.uk/doctor/Forearm-Injuries-and-Fractures.htm>>